

SMARA UPDATE



The Quarterly Newsletter of the Department of Conservation - Office of Mine Reclamation

The California Abandoned Mine Lands Forum

Many agencies at the federal, state, and local levels are involved in work related to abandoned mine lands. Other programs and people interested in abandoned mine issues include academia, environmental groups, consultants, contractors, and the general public. In many cases, the focus is on a particular type of abandoned mine problem (such as mercury methylation or physical hazards) or on a selected geographic area (such as the Bay-Delta Watershed). Over the years, a number of discussion groups were formed to address

regional and problem-specific issues. Until recently, however, there was no forum for the general discussion of abandoned mine land issues of statewide concern.

In February 2003, with the generous support of the California Bay-Delta Authority (CBDA) Ecosystem Restoration Program, the Department of Conservation launched the California Abandoned Mine Lands Forum. The Forum seeks wide participation and discussion on crosscutting abandoned mine issues. By bringing together participants from different regions, programs, and specialties, the Forum hopes to encourage greater collaboration and information sharing on topics such as new research, remediation technologies, current projects, and funding opportunities.

Recognizing that other discussion groups are already tackling major abandoned mine issues and regional abandoned mine problems, the Forum takes care not to duplicate these efforts. For example, the Delta Tributaries Mercury Council provides a forum for addressing mercury issues in the Sacramento River Watershed. Similarly, the Sierra-Trinity Abandoned Mine Lands Agency

Group meets regularly to discuss agency-related research and remediation projects in the Sierras and the Trinity River watershed. As these groups have already distinguished themselves with respect to these topics, the Forum provides a venue where other abandoned mine issues of statewide concern may be discussed.

Still in its first year, the Forum has developed an extensive membership, reflecting its statewide scope and purpose (*see accompanying article on page 3*). Meetings are held quarterly, with participants determining their form and content. Usually, there is a presentation or two on topics of common interest. Recent presentations include:

- Lava Cap Mining Area and Arsenic by G. Fred Lee
- The U.S. Forest Service's Tahoe National Forest Abandoned Mine Lands Program by Rick Weaver
- U.S.G.S. Abandoned Mine Lands Studies, Northern Sierra Nevada by Charles N. Alpers

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- Remedial Activities on Shasta Lake Copper Mines by Phil Woodward
- SMARA and Abandoned Mine Remediation by Jim Pompy
- Abandoned Mine Lands Assessment of the North Yuba Watershed by Sarah Reeves

In addition, two workgroups have been created at the request of the CBDA; (1) an abandoned mines workgroup, consisting of state and federal agency staff, is focused on developing recommendations for CBDA staff to consider when developing a Proposal Solicitation Package for Proposition 13 abandoned mine remediation funds, and (2) a legal workgroup, consisting of state and federal agency attorneys, is focused on developing a manual to assist agency managers in determining whether to proceed with a mine remediation project based on current laws and legal decisions. Both groups are currently working on draft documents.

The California Abandoned Mine Lands Forum is open to all interested parties. The next Forum meeting is scheduled for February 18, 2004. For more information, please contact the Forum's facilitator, Carol Atkins, at: catkins@harriscompany.net.

*Douglas Craig
Manager, Abandoned Mine
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California Abandoned Mine Lands Forum Participants

California Bay-Delta Authority
California Geological Survey
Central Valley Regional Water Quality Control Board

Department of Conservation
Department of Parks and Recreation

Department of Toxic Substances Control

Department of Water Resources

National Oceanic and Atmospheric Administration

Nevada County Resource Conservation District

State Water Resources Control Board

U.S. Bureau of Land Management

U.S. Bureau of Reclamation

U.S. Fish and Wildlife Service

U.S. Forest Service

U.S. Geological Survey

Brown and Caldwell

Camp Dresser & McKee

Dolver Company

G. Fred Lee & Associates

GEI Consultants

Geocon Consultants

Granite Rock

Holdrege & Kull

Montgomery Watson

RTI

Shaw Environmental

Teichert Aggregates

Tetra Tech

Private Citizens



California's Official State Reptile

California's official state reptile is the desert tortoise, *Gopherus agassizii*. It is found in the Mojave and Sonoran deserts of southeastern California. The 'old timers' can live to about 80 years old and some have reached 100 years old.

Loss of habitat, illegal collection, and increased recreational use of the deserts had led to their decline. By the 1980s the population of desert tortoise in the Mojave Desert had decreased by an estimated 90 percent. In response, in 1989 it was listed as a "threatened" species under the California State Endangered Species Act. In 1990, it was listed as "endangered" under the Federal Endangered Species Act.

It is unlawful to collect, harm, touch, or harass a desert tortoise in the wild. When frightened they often empty their bladder as a defense mechanism, and the loss of water can be fatal to the tortoise.

Photo by Jim Pompy.

AMLU Seals Abandoned Mine Shaft

On November 11, 2003, the Abandoned Mine Lands Unit used polyurethane foam to seal yet another abandoned mine shaft (*below*). This one was located in Magalia, Butte County, just a few miles north of Paradise.

Before...



Approximately 50 feet deep, the shaft held Molly, a neighbor's pet dog, trapped for about eight weeks. By chance, another neighbor peered down the shaft and saw Molly looking back up. Having lost 17 pounds during her ordeal, Molly was returned to her owner, who lives just 50 yards away.

The shaft was part of the Perschbaker-Lucretia gold mine, which operated from the 1850s until the 1930s. It was located between a residential neighborhood and a popular swimming hole on Little Butte Creek. A well-worn path winds its way through dense forest that is pockmarked with shafts (most of which have collapsed) and other abandoned mine features. The shaft that Molly fell into was only a few yards off the main path.

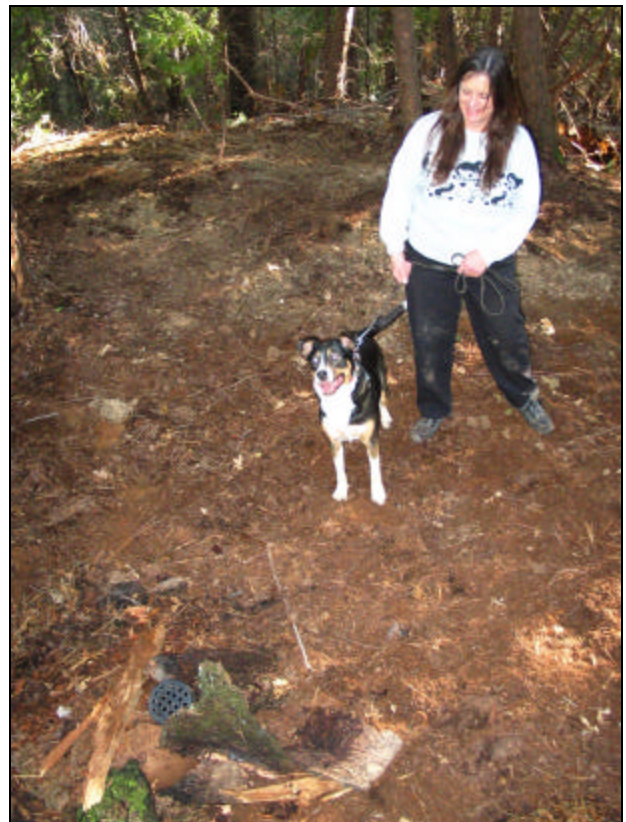
This was truly a team effort; the Paradise Irrigation District, which owns the property, performed all of the environmental studies needed to comply with

the California Environmental Quality Act (CEQA); the Lassen County Search and Rescue Team cleared the shaft prior to closure; and the AMLU contributed the polyurethane foam and contracted with Frontier Environmental Solutions to install the foam plug.

This story, which has a happy ending, highlights the increasing danger faced by Californians as they move into areas of historic mining activity. Darryl Young, Director of the Department of Conservation, attended the closure. "As people move to the wilderness to escape the dangers of the city, they often discover the dangers of the wilderness," said Young. "In this case, the danger was an abandoned mine shaft."

After the foam plug was installed, two feet of adjacent soil was placed on top. Then Molly and her owner, Hildy Langewis, celebrated by standing atop the closed shaft (*below*).

After...



Buying and Maintaining Surety Bonds, and the Question of Environmental Liability Insurance

In last quarter's issue of *SMARA Update*, the current state of the surety bond market was discussed. As a follow-up, two additional issues related to the surety bond as a Financial Assurance for mining in California will be addressed in this issue; maintaining surety bonds, and surety bonds and environmental insurance.

Maintaining the Surety Bond

A significant difference between insurance and surety - that was not touched on in last quarter's issue of *SMARA Update* - is the degree of scrutiny that accompanies the provision of a surety bond. Insurance can be thought of as a product or commodity, bought once, and generally remaining in effect as long as annual premiums are paid.

The buyer is scrutinized once, at the time of purchase to determine the state of health, or the condition of the property being insured. After an insurance policy is bought it is possible that you will never see your insurance agent again.

A surety bond, on the other hand, is more a service than a product –

something that is provided rather than sold, like the cosigning of a loan. The better the surety provider knows the company the more comfortable they will be in assessing and accepting the required low level of risk associated with the surety bond. As such, the initial investigation of the company requesting a surety bond is much more intense than required for the purchase of insurance. A company's books and detailed financial history must be completely opened to the surety provider, as well as the detailed individual financial histories of the CEO and company principals. This level of investigation requires a high degree of cooperation and trust between the surety provider and the mining company.

The mining industry as a whole has always been highly protective of proprietary data, let alone disclosing detailed corporate and personal financial records, so this level of openness may make the mining company very uneasy. However, the investigation remains highly confidential between only the surety provider and the mining company and is fundamental to granting the surety.

After the initial provision of surety, this level of trust and confidence needs to be maintained and remain close over the lifespan of the mine, and to withstand regular updates of the original investigation and re-audits. Without these audits, the surety provider may not be inclined to

extend the life of the bond or to increase its amount, if needed.

SMARA requires that the financial assurance be readdressed annually and modified as necessary to accommodate the changed conditions at the mine site. This annual renewal would be a good opportunity for the mine operator and the surety provider to work together and continue to expand their established relationship of trust.

Surety Bonds and Environmental Liability Insurance

The potential financial liability associated with reclaiming a mine site can come from two very different types of problems. The first is the physical resculpting of the land – returning it to a stable condition suitable for its subsequent use. The second is the protection of the environment from any offsite discharges contaminating the surrounding area, particularly the surface and ground waters. The surety industry and others are viewing these two elements of reclamation very differently.

Physical resculpting of land is the “easy” part and normally involves very traditional time-tested civil engineering and engineering geologic practices. The laying-back of slopes, placement of engineered fills, control of surface drainage, replacement of soils, and revegetation of

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recontoured slopes have been studied and applied for decades across the U.S. and the rest of the world. Techniques continue to improve but are well established, results are highly predictable, and costs can be estimated with a high degree of reliability. Time, equipment, and labor charges vary geographically but are generally standardized and readily available. Calculating the cost of this part of a reclamation plan requires detailed site-specific data and analysis, and while tedious, is straightforward. The successful results of construction projects such as highways, dams, landfills, and housing developments all over the world give testimony to the success and predictability of resculpting the land to a new and stable condition. Providing surety bonds for this type of work has been one of the mainstays of the surety industry, and is one with which they are comfortable.

Post-mining environmental protection is a more difficult proposition to the surety industry because it is hard to predict and is extremely difficult to quantify. A physically reclaimed mine may still pose a chemical threat to the environment if toxic materials remain to leak into the surface or ground waters. This may not be known for several years, and may be discovered after the surety bond is released to the mine operator by the lead agency. By the time a groundwater contamination plume is discovered the problem may involve hundreds of acres and multiple property own-

ers. The discovery of this type of problem at mine sites, superfund sites, and former military bases is widely known, unfortunately, and can be extremely expensive to monitor and remediate. Additionally, it has the potential of being effectively unlimited in both duration and cost.

Not all mines have an equal risk of this type of environmental hazard if they are operated responsibly in terms of fuels, lubricants, solvents, and other chemicals associated with mining and mining equipment. Construction aggregate and most industrial mineral deposits such as limestone or clay do not inherently contain elements or chemicals harmful to humanity or the environment. Certain types of metallic mineral deposits, on the other hand, have not been so benign. For example, exposure of polymetallic sulphide ore bodies to the atmosphere can result in oxidation of the ore and the eventual release of acidic waters if not handled properly. Once such a problem is discovered, extensive sub-surface drilling and monitoring of the site is usually required to determine the scope of the problem, and once the problem is corrected, continuous long-term follow-up monitoring is needed to assure neighbors that the problem has been corrected.

This type of liability is inconsistent with both the near-zero acceptable level of risk and the typical one- to two-year duration of the traditional surety bond, and causes the surety industry serious

concern. This heightened concern for such an environmentally hazardous scenario is not likely to go away - even after the current difficult economic situation facing the surety industry (which was discussed in the previous issue of *SMARA Update*) is resolved.

Several western states, led by the State of Nevada, have met to discuss the pros and cons of some new type of mining financial assurance vehicle that better accommodates the dual nature of mine reclamation - physical resculpting of the mine site and potential long-term environmental contamination of the mine site and surrounding area. No form of financial assurance that is currently acceptable under SMARA in California, or in any other state, satisfactorily addresses both issues. The surety industry does not yet offer such a product. However, at least one company in the Insurance industry, The Shaw Group, has been selling a form of environmental liability insurance since 1997 wherein the risk of long-term environmental cleanup is transferred to their company, insulating the company purchasing the insurance from liability.

In the future, some combination of surety bonding and environmental insurance may provide a better solution and more options for the mining industry for reclamation financial assurances. For example, a traditional construction surety bond could provide

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for the physical reclamation of the mine site in combination with some form of long-term environmental liability insurance to cover the possibility of environmental damage resulting from the mining activity. The rate paid by the mine operator for the environmental insurance would likely depend upon the associated risk assigned by the insurer, similar to life or fire insurance. There would be many details of such a combined financial assurance to resolve before state lawmakers, a lead agency, or the Department of Conservation would feel the public was adequately protected from bearing the financial impact of an environmental clean-up, but the concept is intriguing and may ultimately offer another alternative that meets a need for specific types of mines where a surety bond is difficult to obtain. This will continue to be an ongoing area of inquiry.

*David Beeby
Supervising Geologist*

Editor's Note: The following new regulation was adopted by the State Mining and Geology Board in May 2003. This section – as well as the complete California Code of Regulations – is available at: <http://www.calregs.com>.

SECTION 3504.5 — Mine Inspections Per Calendar Year

A New Addition to the State Mining and Geology Board Regulations

CALIFORNIA CODE OF REGULATIONS

TITLE 14. Natural Resources

Division 2. Department of Conservation

Chapter 8. Mining and Geology

Subchapter 1. State Mining and Geology Board

Article 1. Surface Mining and Reclamation Practice

§3504.5. Mine Inspections Per Calendar Year

Section 3504.5: Mine Inspections Per Calendar Year

The purpose of this section is to clarify and make specific the scope, nature, and frequency of a surface mine inspection required under Public Resources Code Section 2774(b).

(a) Inspection of a surface mining operation shall be conducted not less than once each calendar year to determine if the operation is in compliance with the requirements of Public Resources Code Chapter 9, commencing with section 2710. The lead agency, or the board if the board is the lead agency, shall send written notice to the operator at least ten days prior to any inspection.

(b) A person, who in the determination of the lead agency has demonstrated competence in performing inspections of surface mining operations, shall perform inspections. Evaluation of geological and engineering conditions, when required, shall be performed by or under the supervision of a Geologist Registered to practice in the state under the Geologists and Geophysicists Act or a Professional Engineer registered to practice in the state under the Professional Engineers Act.

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(c) A surface mine inspection shall not be performed by any person who holds a financial interest in or has been employed by the surface mining operation in any capacity, including as a consultant or as a contractor, during the year preceding the inspection.

(d) Annual surface mine inspections may be conducted by a specialist or a team of specialists with expertise that includes but is not limited to, geology, engineering, surveying, ecology, water chemistry and quality, and permitting. Persons participating in the inspection shall follow such reasonable requirements of the operator so that there is minimal interference with the surface mining operation and the inspection is conducted in a safe manner in accordance with all state and federal safety requirements

(e) The operator shall be responsible for the reasonable cost of the annual inspection conducted by the lead agency or by the board if the board is the lead agency.

(f) Inspections may include, but shall not be limited to the following: the operation's horizontal and vertical dimensions; volumes of materials stored on the site; slope angles of stock piles, waste piles and quarry walls; potential geological hazards; equipment and other facilities; samples of materials; photographic or other electronic images of the operation; any measurements or observations deemed necessary by the inspector or the lead agency to

ensure the operation is in compliance with Public Resources Code Chapter 9.

(g) The inspection report to the lead agency shall consist of the inspection form MRRC-1 (4/97), developed by the department and approved by the board, and any other reports or documents prepared by the inspector or inspection team. The lead agency shall provide a copy of the completed inspection report along with the lead agency's statement regarding the status of compliance of the operation to the director within 30 days of completion of the inspection. A copy of the completed inspection report and lead agency statement of compliance shall also be provided to the mine operator within 30 days of completion of the inspection.

NOTE

Authority cited: Section 2755, Public Resources Code. Reference: Section 2774, Public Resources Code.

HISTORY

1. New section filed 4-7-2003; operative 5-7-2003 (Register 2003, No. 15).



The native fuchsia-colored beaver-tailed cactus (*Opuntia basilaris*) is found in southeastern California.

Photo by Jim Pompy

‘Varmit Mound’



As part of the reclamation process at the Hayden Hill gold mine, Lassen County, mounds of large boulders were piled together to provide habitat for native animal species. Marmots, large rodents, are one type of animal that has made these sites home. At over one mile above sea level, marmots are a common native species that inhabit this alpine region. The boulders range from 3 to 5 feet in diameter and provide a quick ready-made dwelling.

Photo by Don Dupras

PROJECTS THAT APPLY TO CEQA AND NEPA

The National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) are laws that dictate procedures for the protection of our environment.

Most proposed mining and reclamation projects are subject to CEQA, the Surface Mining and Reclamation Act of 1975 (SMARA), the State Mining and Geology Board regulations for surface mining and reclamation practice (California Code of Regulations (CCR) Title 14, Chapter 8, Article 1, Section 3500 *et seq.*; Article 9, Section 3700 *et seq.*), and county regulations. Proposed projects that include a federal 'nexus' – or involvement – will require compliance with NEPA. This article will describe situations when a project is subject to NEPA and CEQA.

Background

NEPA was enacted in 1970 during the Nixon administration as a framework to ensure that the environmental impacts of projects are addressed. This act requires all projects conducted by federal agencies to be subject to NEPA. Projects, including mining and reclamation projects, proposed by private entities are also subject to NEPA when the project requires a federal discretionary permit, is located on federal land,

or requires federal funding. Examples of federal discretionary permits include a permit to fill wetlands (Section 404, Clean Water Act) or a permit to impact listed species (Section 10, Endangered Species Act). Mining projects located on federal land are those mineral leases on land owned by the U.S. Forest Service, the Bureau of Land Management or another federal agency. An example of a project requiring federal funding is a road relocation made possible from funds obtained from the U. S. Federal Highway Administration.

CEQA was enacted in 1970 and requires State and local public agencies to consider the environmental consequences of projects that they undertake, fund, or permit. NEPA and CEQA are similar laws that share the common goals of examining and weighing the potential environmental consequences of proposed government actions before such actions are undertaken.

Projects Subject to NEPA and CEQA

When the proposed project is subject to both NEPA and CEQA, NEPA (40 Code of Federal Regulations or C.F.R. 1506.2) strongly encourages lead agencies to coordinate the preparation of joint documents and public hearing, and to reduce duplication between NEPA and comparable CEQA requirements. If a project involves a federal nexus, both the county and the

federal agency must be contacted to determine who will act as lead agency for the project. The preparation of the environmental documents should be coordinated between the applicant and agencies. Coordination meetings must specify which agency will take responsibility for each component of the NEPA/CEQA process. The environmental documents that are prepared for NEPA can be utilized in the place of CEQA unless the requirements of CEQA are more stringent. Federal law prohibits a federal agency from using an EIR prepared by a state agency unless the federal agency was involved in the preparation of the document. When a project is subject to NEPA and CEQA, CEQA Guidelines Sections 15220 to 15229 provide additional information for the preparation of a joint document. These guidelines can be found at the following website: http://ceres.ca.gov/topic/env_law/ceqa/guidelines/art14.html.

NEPA and CEQA have parallel processes with corresponding documents. For example, the state and county *Initial Study Checklist Form* is the CEQA equivalent of the NEPA *Environmental Assessment*. The *CEQA Deskbook* provides a discussion of the differences between NEPA and CEQA and the preparation of joint documents. The following chart summarizes the major areas of parallel process between CEQA and NEPA.

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SUBJECT	CEQA	NEPA
Comparable Terms	State	Federal
	Review for Exemptions	Review for Exclusions
	Exempt	Excluded
	Initial Study	Environmental Assessment
	Negative Declaration	Finding Of No Significant Impact (FONSI)
	EIR	EIS
Definitions		
Environment	Physical Environment Primarily	Human Environment
Exempt Projects	Categorical exemption has 32 standard categories (§15300-15332 Guidelines).	Categorical exclusion definition is very broad and differs from agency to agency (40 C.F.R. 1508.4).
Document Contents		
Standards (or “Thresholds”) of Significance	Has thresholds of significance per Appendix G “Environmental Checklist Form” (§15064.7 Guidelines). Some agencies have their own quantitative thresholds for some impacts (e.g. traffic).	EIS must be prepared when the effect on an action on the human environment is considered significant – often causes a federal agency to develop thresholds to determine significance (e.g. 40 C.F.R. 1508.27).
Mitigation	Requires consideration of mitigation measures to minimize significant effects (§15128.4 Guidelines).	EIS must discuss mitigation for all impacts, but federal agencies not required to carry out mitigation for all significant effects (40 C.F.R. 1502.16 (h).)
Mitigation Performance Standards	Mitigation measures must be fully enforceable through permit conditions, agreements or other legally binding instruments (§15126.4 (a) (2) Guidelines).	No mitigation performance standards, but NEPA does allow for adaptive management (NEPA Book, 2001, p. 169).
Monitoring	Mitigation and monitoring plan is a requirement of the Final EIR (§15097 Guidelines).	The Record of Decision (ROD) must identify mitigation measures adopted. For each, a monitoring and enforcement program must be included (40 C.F.R. 505.2 (c)).
Alternatives	Alternatives are to reduce or eliminate significant effects of a proposed project. May be considered in less detail than the proposed project (§15126.6(d) Guidelines).	Analysis starts with equal consideration of all alternatives, including the proposed action (40 C.F.R. sec. 1502.14).
Socioeconomic Effects	Not required. May be considered at lead agency’s discretion. May be considered in lead agency’s decision to do an override (Guidelines §15131, 15093 (c)).	Must be specifically weighed against environmental effects in decision to adopt a project (40 C.F.R. 1508.14).

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Socioeconomic Effects	Not required. May be considered at lead agency's discretion. May be considered in lead agency's decision to do an override (Guidelines §15131, 15093 (c)).	Must be specifically weighed against environmental effects in decision to adopt a project (40 C.F.R. 1508.14).
Findings and Statement of Overriding Consideration	Lead agency must make findings to explain which significant adverse impacts were mitigated, and which were not, and if not, why not. To adopt a project with such effects must make Statement of Overriding Considerations.	The ROD must explain why the decision was made, alternatives considered, any adopted mitigation measures and reasons why other mitigations not adopted, and a monitoring and enforcement program for adopted mitigation measures (40 C.F.R. 1505.2).
Cumulative Impact	Cumulative effects of related projects are defined by a "list" or a "projection" approach, usually with respect to a specific political or administrative boundary (city, county, air basin etc.) (§15064(i), 15130 (a) Guidelines).	Cumulative effects are very broadly defined according to those that are "truly meaningful," but are rarely aligned with political or administrative boundaries (CEQ, 1997).
Growth-Inducing Effects	Specifically considered (§15126.2 Guidelines).	Considered as indirect effects (C.F.R. 1508 (b)).

REFERENCES

Bass, Ronald, Herson, A.L., and Bogdan, K., 2001, *The NEPA Book*: Solano Press Books, Point Arena, CA.

Bass, Ronald, Herson, A.L., and Bogdan, K., 2001, *The CEQA Deskbook*: Solano Press Books, Point Arena, CA.


WEBSITE LINKS

CEQA Information: <http://ceres.ca.gov/ceqa/index.html>

NEPA Information: <http://ceq.eh.doe.gov/nepa/nepanet.htm>

*Karen Wiese
Staff Environmental Scientist*

STAY OUT!



STAY ALIVE!

Report old, dangerous, and unsafe mines to:

California Dept. of Conservation
Office of Mine Reclamation
Abandoned Mine Lands Unit

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Our website address is at: **<http://www.consrv.ca.gov/omr>**. The purpose of this publication is to impart the latest reclamation tips, as well as changes in SMARA-related legislation or interpretation of existing statutes by court decisions.

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Karen Wiese, Staff Environmental Scientist with the Office of Mine Reclamation, in the process of amending acidic soil at the Leviathan Mine, Alpine County. Acidic soils can decrease plant growth and lower nutrient availability. By adding finely ground lime to buffer the soil, she is preparing to install revegetation test plots to see which suitable native plant species will help to rehabilitate this site (*photo by Jim Pompy*).